



S. S. PAPADOPULOS & ASSOCIATES, INC.
ENVIRONMENTAL & WATER RESOURCE CONSULTANTS

INVOICE

Client:
US Environmental Protection Agency

RTP Finance Center
 (AA216-01)
 109 TW Alexander Drive
 Durham, NC 27711
 Mr. Daniel Olsson

Invoice #:	23164
Date:	4/13/2021
Project Name:	EPA R5: Hydrogeologic Synthesis & Modeling Support
Project #:	1725

Comments:

GSA Contract #GS-10F-0462M
 Order No.: 68HE0520F0029

Remit Payment To: S. S. Papadopoulos & Associates, Inc.
 1801 Rockville Pike - Suite 220
 Rockville, MD 20852
 Phone: (301) 718-8900

For Services Rendered Through 3/31/2021

001-01-10 - 0001AA-Ottawa Township Flat Glass Superfund Alternative Site
Professional Services

<u>Employee Type</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Sr. Project Hydrogeologist/Sci			
Sorel, Dominique			\$1,862.38
Prj. Hydrogeologist/Sci.			
Shannon, Rachel			\$3,124.56
Technician/Draftsperson			
Pekoske, Kristen M			\$18.86
Labor Subtotal			\$5,005.80
Item Subtotal			\$5,005.80

002-01-10 - 0001AB-Union Carbide Corporation Superfund Site
Professional Services

<u>Employee Type</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
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Sr. Project Hydrogeologist/Sci			
Sorel, Dominique			\$143.26
Technician/Draftsperson			
Pekoske, Kristen M			\$150.88
Labor Subtotal			\$294.14
Item Subtotal			\$294.14

003-01-10 - 0001AC-St. Regis Paper Company Superfund Site**Professional Services**

<u>Employee Type</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Sr. Project Hydrogeologist/Sci			
Sorel, Dominique			\$71.63
Labor Subtotal			\$71.63

Outside Consultants

<u>Activity/Vendor</u>	<u>Invoice</u>	<u>Date</u>	<u>Cost</u>	<u>Mult</u>	<u>Amount</u>
Subterranean Research, Inc.	SSP20201-I14				\$2,150.04
Outside Consultants Subtotal					\$2,150.04
Item Subtotal					\$2,221.67

004-00-10 - 0001AD-Pristine Superfund Site**Professional Services**

<u>Employee Type</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Principal			
Tonkin, Matthew J			\$3,904.02
Sr. Hydrogeologist/Sci.			
Mihm, Kathleen			\$2,765.18
Sr. Project Hydrogeologist/Sci			
Perozo, Erica L. DiFilippo			\$15,328.82
Sorel, Dominique			\$644.67
Prj. Hydrogeologist/Sci.			
Sivaslian, Ohannes			\$1,887.76
Staff Hydrogeologist/Sci.			
Adams, Glen			\$303.93
Technician/Draftsperson			
Pekoske, Kristen M			\$37.72
Rutledge, Devon R			\$3,093.04
Labor Subtotal			\$27,965.14

Item Subtotal

\$27,965.14

005-01-10 - 0001AE-Chemical Recovery Systems Superfund Site

Professional Services

<u>Employee Type</u>	Hours	Rate	Amount
Principal			
Tonkin, Matthew J			\$113.16
Sr. Project Hydrogeologist/Sci			
Sorel, Dominique			\$716.30

Project 1725 EPA R5: Hydrogeologic Synthesis & Modeling Support

Invoice 23164

Technician/Draftsperson

Pekoske, Kristen M

\$56.58

Labor Subtotal**\$886.04****Item Subtotal****\$886.04****007-01-10 - 0001AG-Lemberger Transport & Recycling Superfund Sites****Outside Consultants**

<u>Activity/Vendor</u>	<u>Invoice</u>	<u>Date</u>	<u>Cost</u>	<u>Mult</u>	<u>Amount</u>
Subterranean Research, Inc.	SSP20201-I14				\$611.06
Outside Consultants Subtotal					\$611.06
Item Subtotal					\$611.06

008-01-10 - 0001AH-Hedblum Industries Superfund Site**Outside Consultants**

<u>Activity/Vendor</u>	<u>Invoice</u>	<u>Date</u>	<u>Cost</u>	<u>Mult</u>	<u>Amount</u>
Subterranean Research, Inc.	SSP20201-I14				\$4,979.04
Outside Consultants Subtotal					\$4,979.04
Item Subtotal					\$4,979.04

009-01-10 - 0001AI-SE Rockford**Professional Services**

<u>Employee Type</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Sr. Hydrogeologist/Sci.			
Mihm, Kathleen			\$2,607.16
Sr. Project Hydrogeologist/Sci			
Sorel, Dominique			\$2,793.57
Staff Hydrogeologist/Sci.			
Adams, Glen			\$202.62
Technician/Draftsperson			
Haas, Jonathan N			\$150.88
Pekoske, Kristen M			\$37.72

Labor Subtotal			
Item Subtotal			\$5,791.96

010-01-10 - 0001AJ-Forest Waste Superfund Site

Professional Services

<u>Employee Type</u>	Hours	Rate	Amount
Principal			
Tonkin, Matthew J			\$113.16

Project 1725 EPA R5: Hydrogeologic Synthesis & Modeling Support

Invoice 23164

Associate

Neville, Christopher			\$178.03
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Sr. Project Hydrogeologist/Sci

Sorel, Dominique			\$787.93
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Labor Subtotal			\$1,079.12
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Item Subtotal			\$1,079.12
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011-01-10 - 0001AK - Motor Wheel Tire Disposal

Professional Services

Employee Type	Hours	Rate	Amount
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Principal

Tonkin, Matthew J			\$792.12
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Sr. Project Hydrogeologist/Sci

Sorel, Dominique			\$4,082.91
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Technician/Draftsperson

Pekoske, Kristen M			\$207.46
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Labor Subtotal			\$5,082.49
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Item Subtotal			\$5,082.49
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012-01-10 - 0001AL - Verona Wells

Professional Services

Employee Type	Hours	Rate	Amount
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Principal

Tonkin, Matthew J			\$339.48
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Sr. Project Hydrogeologist/Sci

Hayes, Douglas A			\$573.04
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Karanovic, Marinko			\$71.63
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Sorel, Dominique			\$1,862.38
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Prj. Hydrogeologist/Sci.

Cousins, S. James			\$976.42
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Technician/Draftsperson

Pekoske, Kristen M			\$245.18
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Labor Subtotal

\$4,068.14

Item Subtotal

\$4,068.14

Invoice Amount

\$57,984.60

Project Summary

Budget	Previously Billed	Current Billing	Billed To Date	Budget Remaining
\$1,817,555.68	\$529,153.72	\$57,984.60	\$587,138.32	\$1,230,417.36

Matthew J. Tonkin
Project Manager



S.S. Papadopoulos & Associates, Inc.

505 N. Pine St., Williamsfield, IL 61489-9517

Web: www.sspa.com // Email: matt@sspa.com // Skype: mattsspa Office:
(309) 616 9060 // Cell: (508) 815-9886

Page 4 of 4



S.S. PAPADOPULOS & ASSOCIATES, INC.
ENVIRONMENTAL & WATER-RESOURCE CONSULTANTS

Site Specific Detail Report

EPA TASK ORDER #: 68HE0520F0029

GSA Contract #GS-10F-0462M

Inv. #23164

Reporting Period: 11 February 2020 through March 31, 2021

subClin	Site/Project Title	Job Number			Current Charges	Cumulative Charges
		SSID	Action Code	OU	Inv. #23164	
0001AA	Ottawa Township Flat Glass Superfund Alternative Site	B5A7	NK	03	\$ 2,502.90	\$ 53,223.67
0001AA	Ottawa Township Flat Glass Superfund Alternative Site	B5A7	NK	04	\$ 2,502.90	\$ 53,223.67
0001AB	Union Carbide Corporation Superfund Site	05F4	BF	02	\$ 294.14	\$ 46,836.31
0001AC	St. Regis Paper Company Superfund Site	05J2	OM	00	\$ 2,221.67	\$ 36,723.54
0001AD	Pristine Superfund Site	0556	ME	05	\$ 27,965.14	\$ 216,436.63
0001AE	Chemical Recovery Systems Superfund Site	0521	BE	01	\$ 886.04	\$ 97,158.60
0001AF	Lemberger Landfill Superfund Sites	053E	FE	00	\$ -	\$ 322.34
0001AG	Lemberger Transport & Recycling Superfund Site	05J4	FE	00	\$ 611.06	\$ 5,776.67
0001AH	Hedblum Industries Superfund Site	05E9	ME	01	\$ 4,979.04	\$ 20,759.03
0001AI	SE Rockford Superfund Site	05DK	OM	02	\$ 5,791.96	\$ 13,430.91
0001AJ	Forest Waste Superfund Site	05D5	BF	02	\$ 1,079.12	\$ 31,334.37
0001AK	Motor Wheel Disposal	05S5	FE	00	\$ 5,082.49	\$ 7,844.44
0001AL	Verona Well Field	0551	TA	01	\$ 2,034.07	\$ 2,034.07
0001AL	Verona Well Field	0551	TA	02	\$ 2,034.07	\$ 2,034.07
Total					\$ 57,984.60	\$ 587,138.32

1801 ROCKVILLE PIKE, SUITE 220, ROCKVILLE, MARYLAND 20852-1633 • TEL: (301) 718-8900
www.ssipa.com • e-mail: MarylandDC@ssipa.com



S.S. PAPADOPULOS & ASSOCIATES, INC.
ENVIRONMENTAL & WATER-RESOURCE CONSULTANTS

EPA Region 5 Support
Description of Services Performed
Period of Performance:
Through March 2021

1725-002-01-10 0001AA-Ottawa Township Flat Glass Superfund Alternative Site

Services were performed by the following SSP&A staff:

Staff	Hours
Dominique Sorel	
Rachel Shannon	
Kristen Pecoske	

During this period, D. Sorel worked on instructions provided by EPA to update water level and plume mapping results. She communicated with X. Wang and R. Shannon and worked with R. Shannon to finalize the water level and plume mapping, compared the previous version with the current version, and provide comments. She also worked on the monthly report. R. Shannon reviewed documents and worked on plume kriging, water-level map revisions, and plume maps. She spent additional time updating the water level maps and working on 3D plume maps. K. Pecoske worked on the monthly report.

1725-002-01-10 0001AB-Union Carbide Corporation Superfund Site

Services were performed by the following SSP&A staff:

Staff	Hours
Dominique Sorel	
Kristen Pecoske	

During this period, D. Sorel working on the monthly report. K. Pecoske also joined a call with D. Sorel, compiled historical deliverables for the monthly report, and formatted the report.

1725-003-01-10 0001AC-St. Regis Paper Company Superfund Site

Staff	Hours
Dominique Sorel	

During this period, D. Sorel worked on the monthly report.

1725-004-01-10 0001AD-Pristine Superfund Site Systems

1801 ROCKVILLE PIKE, SUITE 220, ROCKVILLE, MARYLAND 20852-1649 • TEL. (301) 718-8900 FAX (301) 718-8909
www.sspa.com • e-mail: mtonkin@sspa.com

Staff	Hours
Kathleen Mihm	██████
Erica Perozo	██████
Dominique Sorel	██████
Ohannes Sivaslian	██████
Glen Adams	██████
Matthew Tonkin	██████
Kristen Pekoske	██████
Devon Rutledge	██████

During this period, K. Mihm reviewed documents/background, GIS files, quaternary geology and bedrock surface GIS files. She then input and compiled the lithology data for RockWorks. Finally, she worked on the RockWorks and EnviroInsite input files and data management for the revised conceptual site model. E. Perozo worked on boring logs, soil boring log QA, and downloaded reports. She prepared data summary tables, extracted data from reports, had a call with GHD on soil boring logs, worked on presentation slides, and had a call with EPA. She made additional edits to presentation slides and had a call with the PRP and EPA. E. Perozo worked on water-level mapping, a Memorandum for the March 8th conference call, evaluation of the regional contamination. She had a call with O. Sivaslian and K. Mihm regarding boring logs, and a call with GHD regarding boring logs. Additionally, she reviewed the 5-year data report text and compiled USGS water-level data. She spent time on water-level kriging using the USGS 1964 data, current data, and the regional contamination evaluation. Finally, she had prepared for a call, joined a call with EPA and the PRP. She worked on the memo for the March 29 conference call. D. Sorel worked on the monthly report and reviewed the conference call memos. O. Sivaslian worked on QA of the database and reviewed the well logs. G. Adams georeferenced an image and digitized groundwater contours. He worked on spatial analysis and georeferencing, and digitizing additional features. M. Tonkin conducted a pre-meeting with E. Perozo before the group call, joined the 2nd hour of the group call, and attended a call with GHD on boring log interpretation - data, methods, and visualization. He joined a call with E. Perozo regarding data gaps in the various aquifer units and had a follow up call with EPA regarding well networks, data gaps, and interpretation of time series data. M. Tonkin attended the second half of the call regarding data gaps and the monitoring network; he followed up with E. Perozo on GIS, flow directions, and the role of regional pumping on flow directions and migration; had a call with E. Perozo on meeting preparation; and attended a call with EPA and the group regarding contamination extents, data, and data gaps. Additionally, he prepared for and attended a call with SME group on the geology near the site property; joined a meeting with EPA on offsite contamination, historical flow directions and pumping, and maps of water level

with EPA on onsite contamination, historical flow directions and pumping, and maps of water level and groundwater data. Finally, he attended pre-call with EPA on Q.15 and other topics; prepared for and attended a call on Q.15 with EPA and the PRP group; reviewed files and correspondence; made edits to the memo on recent meetings; and had calls and corresponded with E. Perozo on path forward for geology, data gaps, other topics raised on calls. K. Pekoske worked on the monthly report. D. Rutledge worked on Endnote entries and data entry for E. Perozo.

**1725-005-01-10 0001AE-Chemical Recovery Systems Superfund Site**

Staff	Hours
Dominique Sorel	████
Matthew Tonkin	████
Kristen Pekoske	████

During this period, D. Sorel had a conference call with EPA and M. Tonkin, planned site scope of work, researched equipment, and worked on the monthly report. M. Tonkin called EPA to discuss work scheduling, scope of tasks, and objectives. K. Pekoske worked on the monthly report, formatted and reviewed a document.

1725-009-01-10 0001AI-SE Rockford

Staff	Hours
Kathleen Mihm	████
Dominique Sorel	████
Glen Adams	████
Jonathan Haas	████
Kristen Pekoske	████

During this period, K. Mihm worked on building a conceptual site model to support future data analysis and plume mapping at the site. Work involved digitizing cross sections, lithology and well data files, lithology picks, site data geology and bedrock surface data entry, merging the contour with the regional map, setting up RockWorks input files for a 3D geological model and air photo draping. D. Sorel worked on the geologic model, Equis EDP, database verification, and correspondence with EPA. She reviewed the 3D geology model, reviewed the EDD, and communicated with EPA regarding the EDD review. Finally, she joined a conference call with EPA to meet new RPM and discuss water-level gauging before well U35 is abandoned. She worked on setup of water level mapping and worked on the monthly report G. Adams converted DEM to x, y, z, points for K. Mihm. J. Haas searched for surficial geology GIS layers and tried them in workmaps for K. Mihm. K. Pekoske worked on the monthly report.

1725-010-01-10 001AJ-Forest Waste Superfund Site

Staff	Hours
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Christopher Neville	1.00
Dominique Sorel	5.50
Matthew Tonkin	0.50

During this period, C. Neville reviewed recommendations for new pumping tests. D. Sorel communicated with M. Tonkin, C. Neville and EPA regarding an attorney statement for the aquifer test. She also worked on the monthly report, reviewed residential 1,4D analytical results, provided a summary and corresponded with M. Tonkin and K. Soderberg. M. Tonkin had calls and corresponded



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on the review of the pumping test and provided a write up conclusion sentence regarded the remedy design.

1725-011-01-10 0001AK - Motor Wheel Tire Disposal

Staff	Hours
Dominique Sorel	
Matthew Tonkin	
Kristen Pecoske	

During this period, D. Sorel reviewed the site reports and documents in preparation for a conference call with EPA and PRP. She participated in the conference call regarding modeling documents review. She also reviewed documents, worked on a summary presentation for a call with M. Tonkin and worked on the monthly report. Finally, D. Sorel joined a conference call with EPA and M. Tonkin, scheduled a meeting with the PRP, communicated with EPA, prepared for the model meeting with a list of questions, and communicated with M. Tonkin. M. Tonkin joined a kickoff call with EPA and RP consultants to discuss document needs and modeling. He followed up with a scheduling call with D. Sorel to plan document review and lay up of questions to focus on for subsequent modeling meeting. M. Tonkin also had a call with D. Sorel on document review, planning schedule and staffing for model analysis. Finally, he reviewed the slide deck and the plan for next follow up call regarding modeling application(s), joined a modeling-data related call with EPA, reviewed and compiled materials, and prepared questions for the RP modelers. K. Pecoske organized documents, adding documents to Endnote and worked on the monthly report.

1725-012-01-10 0001AL - Verona Wells

Staff	Hours
Douglas Hayes	
Marinko Karanovic	
Dominique Sorel	
S. James Cousins	
Matthew Tonkin	
Kristen Pecoske	

During this period, D. Hayes worked on the development of AddWell app for KT3D_H2O. M. Karanovic discussed KT3D H2O with M. Tonkin and D. Sorel. D. Sorel planned the kickoff meeting.

met with M. Tonkin in preparation for the call with EPA, joined the project kickoff call with EPA and followed up, provided instructions for preparing the GIS site basemap, and reviewed and filed documents. She also had a call with M. Karanovic and D. Hayes regarding KT3D_H2O model setup. S.J. Cousins worked on the GIS project calibration and migration, and a new basemap and data for the project. M. Tonkin had a pre-meeting with D. Sorel, then a call with EPA data needs, analyses, and steps in the work scope. He also had a call on kriging for water-level analysis on the site backward compatibility, and updating calculations. K. Pekoske setup the project Endnote file, importing older files and organizing files. She also added new documents to Endnote.



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Subterranean Research, Inc.

Services were performed by Subterranean on the following tasks, through March:

Site	Hours
St. Regis	9.5
Lemberger Transport & Recycling	2.7
Hedblum	22.0

Work completed by Subterranean during this period is described on their attached invoice.

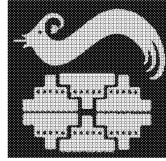
S.S. PAPADOPULOS & ASSOCIATES, INC.

Summary completed by:

Dominique Sorel
Alternate Project Manager

Summary reviewed by:

Matthew Tonkin
Project Manager



DAVID E. DOUGHERTY
SUBTERRANEAN RESEARCH, INC.
121 BEACH STREET, UNIT 301
BOSTON, MA 02111-2501
(781)-710-1448
DDOUGHER@SUBTERRA.COM

8 April 2021

Jeanne Bailey
S. S. Papadopoulos & Associates, Inc.
1801 Rockville Pike
Suite 200
Rockville, MD 20852

RE: Invoice ID: SSP20201-I14
Invoice Period: Through 31 March 2021
SSP&A Project No.: 1725

Dear Ms. Bailey:

Enclosed is an executed invoice for the billing period through 31 March 2021. A monthly progress report was sent to Dominique separately.

Please contact me with any questions (ddougher@subterra.com or 781-710-1448).

Sincerely yours,

SUBTERRANEAN RESEARCH, INC.

David E. Dougherty

Enclosures: Executed invoice

cc: D. Sorel, M. Tonkin

Subterranean Research, Inc.
121 Beach St., Unit 301
Boston, MA 02111-2501

Date: 8 April 2021

INVOICE TO:
S. S. Papadopoulos & Associates, Inc.
1801 Rockville Pike
Suite 200
Rockville, MD 20852

RE: Our Invoice ID: SSP20201-I14
Invoice Period: Through 31 March 2021
SSP&A Project No.: 1725

SubClin#	Description	Current SRI Hours	Labor Rate	Current SRI Labor \$\$	Current Other SRI Expense	Current Other SRI Expense \$\$	Current SRI Total \$\$	SRI Total \$\$ Since 2/10/2020
0001AC	St. Regis	9.5	\$226.32/hr	\$2,150.04	None	\$0.00	\$2,150.04	\$35,486.97
0001AF	Lemberger Landfill	0.0	\$226.32/hr	\$0.00	None	\$0.00	\$0.00	\$0.00
0001AG	Lemberger Transport & Recycling	2.7	\$226.32/hr	\$611.06	None	\$0.00	\$611.06	\$5,454.31
0001AH	Hedblum	22.0	\$226.32/hr	\$4,979.04	None	\$0.00	\$4,979.04	\$20,436.69
Total Billing:		34.2		\$7,740.14		\$0.00	\$7,740.14	\$61,377.97

* NOTE: Differences of pennies may occur due to rounding and accumulation.

Site	# Hrs	Activities
St. Regis	9.5	Review well contingency memo and organoclay memo; Receive OU9 investigation report for review; Conference call; Telephone; Email.
Lemberger Landfill	0.0	<See Lemberger Transport & Recycling>
Lemberger Transport & Recycling	2.7	Comment on monitoring plan; Conference call; Email.
Hedblum	22.0	Review and comments on base map, draft QAPP, VI report; Review REM report; Conference calls; Telephone; Email.

Prepared by:


David E. Dougherty

Date: 8 April 2021

